

Notice of Allowability

Application No.

10/722,171

Examiner

Seyed Azarian

Applicant(s)

GRITZKY ET AL.

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/14/2007 and telephone interview and fax inquiry filed on January 30, 2008.
2. ☒ The allowed claim(s) is/are 1-2, 4-13, 15-20 now renumbered as 1-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Response to Amendment

1. Based on applicant's amendment, filed 11/14/2007, see page 2 through 6 of the remarks, also telephone interview and fax inquiry filed on January 30, 2008, with respect to cancellation of claims 3 and 14, and amended claims 1 and 9, have been fully considered and are persuasive, upon further consideration the rejection, of 103(a) for claims 1-2, 4-13 and 15-20, are hereby withdrawn.

The claims 1-2, 4-13 and 15-20 now renumbered as 1-18 are allowed.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it must be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicants Attorney (Mr. Evan Reno Sotiriou, Reg No. 46,247), on January 30, 2008, without traverse.

The amended claims 1 and 9 as follows:

Cancel claims 3 and 14.

Claim 1. (Currently Amended) An apparatus for detecting a contour of an object within an image, comprising:

a user interface for selecting first and second points within an object,

said object being within an image; and

a processor for detecting first and second subcontours based on said first and second points, respectively, said first and second subcontours being based on detected edges, said processor combining said first and second subcontours into a contour and wherein a pre-set limit defines image subsets with respect to said first and second points, said processor searching said image subsets for said detected edges.

Claim 9. (Currently Amended) A user interactive method for detecting the contour of an object within an image; comprising:

selecting a first point within an object using a user interface, said object being displayed within an image;

identifying a first subcontour based on said first point;

selecting a second point within said object using said user interface;

identifying a second subcontour based on said second point; and

defining a contour based on said first and second subcontours;

selecting a third point using said user interface;

defining a third subcontour based on said third point; and

calculating an updated contour based on said contour and said third subcontour.

REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance.

This invention relates generally to diagnostic ultrasound systems. In particular, the present invention relates to method and apparatus for interactively detecting the contour of an object.

Based on applicant's amendment, with respect to claim 1, representative of claim 9 the closest prior art of record (Sheehan and Yamauchi), Sheehan reference is directed to reconstruction-based modeling, but reconstruction algorithm of Sheehan does not estimate the surface based on detected edges, but instead relies on the use of a predetermined mesh model that is based on training data derived from other patients".

Yamauchi reference is directed to an ultrasonic diagnostic device and an image processing device, and particularly to a technique to extract a contour of an object that is subject to an examination from an image. But neither Sheehan nor Yamauchi teach or suggest, among other things, " a processor for detecting first and second subcontours based on said first and second points, respectively, said first and second subcontours being based on detected edges, said processor combining said first and second subcontours into a contour and wherein a pre-set limit defines image subsets with respect to said first and second points, said processor searching said image subsets for said detected edges".

Additionally claim 17, the closest prior art of record (Sheehan and Yamauchi) do not teach or suggest, among other things, " acquiring an image comprising an object, image further comprising pixel or Voxel data; selecting points within said object using a user interface; searching for edges within said image around said points as said points are selected, edges being representative of non-uniformities in said pixel or Voxel data, edges defining subcontours around each of said points; combining subcontours into a contour as each of subcontours is defined; and calculating a parameter within contour, parameter being at least one of area, volume, circumference, long axis, short axis, and longest distance.

These key features in combination with the other features of the claimed invention are neither taught nor suggested by (Sheehan and Yamauchi) prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (571) 272-7443. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR.

Status information about the PAIR system, see [http:// pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seyed Azarian
Patent Examiner
Group Art Unit 2624
January 30, 2008


SEYED AZARIAN
PRIMARY EXAMINER